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EXAMINER

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ART UNIT PAPER NUMBER

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/667,491
Filing Date: September 23, 2003
Appellant(s): SHEFFIELD ET AL.

Thomas Anderson
For Appellant

EXAMINER'S ANSWER

MAILED
OCT 31 2006
GROUP 1700

This is in response to the appeal brief filed September 15, 2006 appealing from the Office action mailed March 8, 2006.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is substantially correct. The changes are as follows: All rejections using Taylor et al. and Ozeki et al. are withdrawn. Therefore, all rejections are withdrawn except for the rejections using Tanaka et al.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

4959507

Tanaka et al.

9-1990

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-6, 19 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Tanaka et al.

Regarding claim 1, Tanaka et al. teach a method for forming a bonded ceramic-metal composite substrate, the method comprising the step of: providing a layer of the circuit board 1 having the conductive circuit trace 2 (figure 1) on a surface thereof; and reducing a surface roughness (column 2 lines 23-35) of at least one surface of the conductive circuit trace on the surface of the circuit board layer. The method of Tanaka et al. would improve performance of a signal transmitted via the conductive circuit trace, since the surface roughness of the copper element 2 is reduced.

Regarding claim 2, Tanaka et al. teach wherein the step of reducing the surface roughness includes mechanical polishing the at least one surface (column 4 lines 59-64).

Regarding claims 3 -5, Tanaka et al. teach wherein the surface roughness of the at least one surface is reduced to no more than 3 μm (median surface roughness), and a maximum surface roughness of no greater than 18 μm (column 2 lines 23-35), which is within the range of the instant claims.

Regarding claim 6, Tanaka et al. teach wherein the at least one surface of the conductive circuit trace includes one of a group consisting of: a surface parallel and distal to a surface of the circuit board; a surface parallel and proximal to the surface of the circuit board; and a surface perpendicular to the surface of the circuit board (figure 1).

Regarding claim 19, Tanaka et al. teach wherein the conductive circuit trace is formed on the surface of the circuit board layer 1 (figure 1).

Regarding claim 20, Tanaka et al. teach wherein the conductive circuit trace 2 is bonded (i.e., affixed, column 3 lines 56-60) to the surface of the circuit board layer 1.

(10) Response to Argument

With respect to the argument on pages 8-9 that Tanaka et al. fail to teach the limitation of "so as to improve performance of a signal transmitted via the conductive circuit trace," the examiner acknowledges that this is not explicitly stated by Tanaka et al. However, the performance of a signal transmitted via the conductive trace (i.e., copper element 2 of Fig. 1 of Tanaka et al.) is inherently improved, since Tanaka et al. use the same method, i.e. reducing a surface roughness (column 2 lines 23-35) of at least one surface of the conductive circuit trace on the surface of the circuit board layer, as that of the instant claim. If this limitation is not inherently disclosed by Tanaka et al.,

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then the outcome, that is, improving the performance of the signal, must be a result of limitation(s) not presently claimed. Therefore, since Tanaka et al. read on all the method steps of the instant claim, the performance of a signal transmitted via the conductive trace is inherently improved.

With respect to the method of polishing as argued on page 10, Tanaka et al. teach reducing the surface roughness includes mechanical polishing the at least one surface (column 4 lines 59-64) as recited in claim 2; the argument on page 10 omitted this method. The instant claim uses Markush group language, therefore only one element of the Markush group is sufficient for rejecting the claim.

With respect to the roughness as argued on page 11, Tanaka et al. teach the surface roughness of the at least one surface is reduced to no more than 3 μm (median surface roughness), and a maximum surface roughness of no greater than 18 μm (column 2 lines 23-35), which is within the range of the instant claims. Even though the maximum acceptable roughness of Tanaka et al. is greater than the maximum roughness of the instant claims, the range of roughness of Tanaka et al. encompasses the range of the instant claims.

With respect to the surfaces as argued on page 11, Tanaka et al. teach reducing the roughness of a surface parallel and distal to a surface of the circuit board. The instant claim uses Markush group language, therefore only one element of the Markush group is sufficient for rejecting the claim.

(11) Related Proceeding(s) Appendix

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No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

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For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

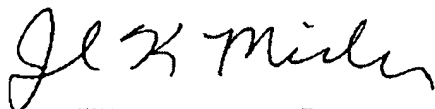


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